

# **Professional HD Integrated Receiver Decoder**

## **User Manual**

# TABLE OF CONTENT

<b>SAFETY .....</b>	<b>1</b>
<b>REFERENCE .....</b>	<b>2</b>
<b>FEATURES .....</b>	<b>3</b>
<b>INTRODUCTION.....</b>	<b>4</b>
FRONT PANEL.....	4
REAR PANEL.....	5
TUNER IN AND ASI OUT.....	6
TUNER IN AND IP OUT.....	6
TUNER IN AND CVBS OUT.....	6
IP IN AND ASI OUT .....	7
TUNER/IP/ASI IN AND SDI OUT .....	7
TUNER/IP/ASI IN AND HDMI OUT .....	7
SYSTEM CONNECTION DIAGRAM.....	8
<b>FRONT PANEL CONTROL &amp; OPERATION .....</b>	<b>9</b>
INPUT .....	12
<i>Sources</i> .....	12
<i>Params</i> .....	13
OUTPUT .....	16
<i>Program Setup</i> .....	16
<i>Decoder</i> .....	17
<i>SDI</i> .....	18
<i>Ethernet</i> .....	18
SYSTEM.....	20
<i>Local Setup</i> .....	20
<i>Properties</i> .....	20
<i>Factory Setting</i> .....	21
STATUS.....	21
<i>Input status</i> .....	22
<i>Outputs status</i> .....	22
<b>NMS CONTROL &amp; OPERATION.....</b>	<b>23</b>
LAN PARAMETERS SETTING & CONNECTION ESTABLISHMENT .....	23
<i>Local network setting</i> .....	23
<i>Connection</i> .....	23
NMS MAIN INTERFACE CONFIGURATION.....	24
<b>TROUBLESHOOTING .....</b>	<b>33</b>
<b>SPECIFICATIONS.....</b>	<b>36</b>

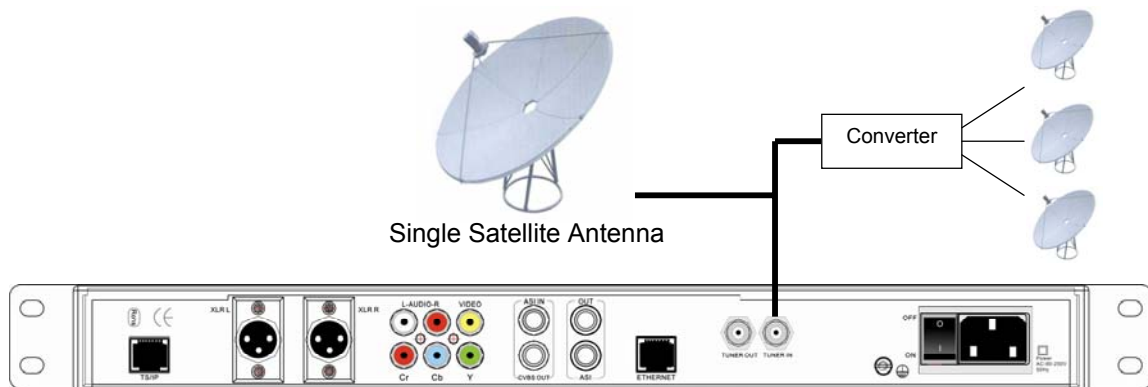
## Safety

- To avoid electric-shock hazards, do not open the receiver; refer service to qualified personnel only.
- Keep the receiver away from flower vases, tubs, sinks, etc., in order to avoid damaging the equipment.
- Do not expose the receiver in the sunlight. And keep it away from the heat source.
- Do not block ventilation holes of the Receiver so that air can circulate freely.
- When the abnormal phenomenon occurs, cut off the power immediately.
- Do not touch the receiver during thunder. That might create electric shock hazards.
- Switch the receiver off whenever it remains out of service for an extended period.
- Be sure to turn the receiver off and disconnect the AC power cord before cleaning the receiver surface. If the surface is dirty, wipe clean with a cloth that has been dipped in a diluted soap water solution and wrung out thoroughly, and then wipe again with a dry cloth.
- Specifications and functions may be changed for improvement without notice in advance.

## Reference

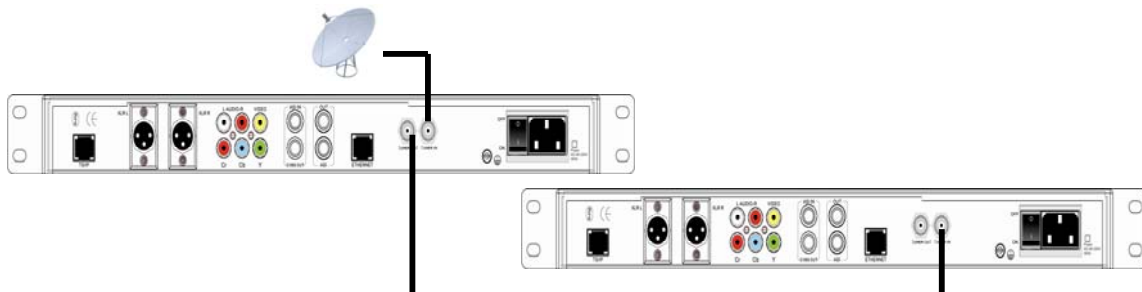
- Connect a Antenna

To HD IRD IRD, you can connect either a single satellite antenna directly or through converter box several antennas or LNB of multi-feed equipment.



- Loop Through

If you wish, you can connect the same LNB to another IRD via the loop through of your digital receiver decoder. Connect one end of a coaxial cable to the LNB OUT on the IRD and connect the other end to the LNB IN on your second IRD.



## Features

- MPEG-4 AVC (H.264) Digital compliant
- DVB-S2/C/T signal input support (optional)
- For DVB-S2 model, input Frequency 950-2150 MHz, Symbol Rate 1 ~ 45 Ms/s (1-37Ms/s for 8PSK); for DVB-T model, input Frequency 45-858 MHz, Symbol Rate 0.45 ~ 7 Ms/s; for DVB-C model, input Frequency 50-862 MHz, Symbol Rate 3 ~ 7Ms/s
- 1 Tuner Input (F-Type) and Loop-through
- 2 DVB Common Interfaces (CI ) for descrambling most common CA systems
- 1 ASI transport stream input & 2 identical ASI outputs capable of working as TS decoder
- IP stream input and output (optional)
- VBI Teletext handling
- 2 identical SDI outputs for convenient conversion of program format
- AES/EBU digital audio output
- BNC-interfaced CVBS output
- HDMI output with high quality video and audio gives an audiovisual feast
- Full control via front panel or Ethernet port
- Automatic recovery from latest system configuration for unexpected power off
- Software upgrade via NMS

## Introduction

The HD IRD is an advanced MPEG-4 AVC (H.264) HD integrated receiver decoder with optional TS-IP mutual conversion function. It can receive signal from different program sources such as Tuner, ASI or IP (optional). Its prolific output interfaces such as IP, SDI, AES/EBU, HDMI and ASI can meet different system requirements. The HD IRD also has 2 common interface slots which can decode multiple scrambled channels. It is an ideal component for either a standard SD/HD digital video or an IPTV head-end system.

### Front Panel



#### LED Indicator:

**Power:** The LED lights on when the STB is power on.

**Lock:** The LED lights on when a channel is locked. Otherwise there is no channel locked.

**Alarm:** The LED flickers when there is something abnormal. For example, the strength of the input signal is too weak.

**Display screen:** Show the channel name of TV or Radio program and the configuration information.

**CI SLOTS:** There are two CI slots for various CAS CAM (PCMCIA) modules.

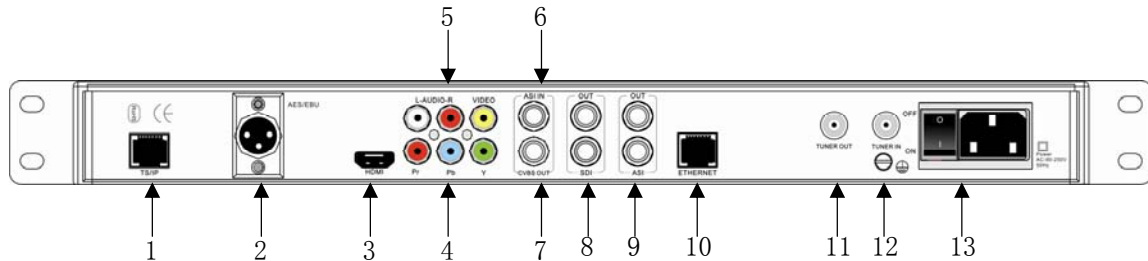
#### KEY PADS:

**Select Keys:** To change channels, adjust volume and configure the IRD.

**MENU:** To enter the menu and the quit function of the sub menus.

**OK:** To confirm the operation in the setup.

## Rear Panel

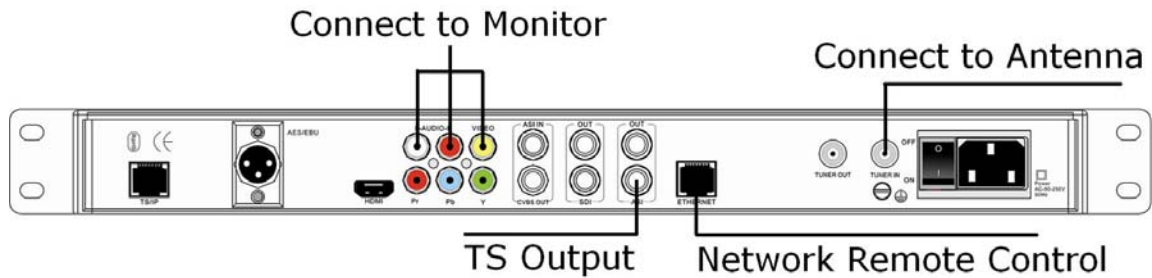


1. **TS/IP**: TS stream input and output as IP format.
2. **AES/EBU**: Professional digital Audio output with XLR connector.
3. **HDMI**: Output high quality picture and sound with one cable.
4. **Cr/Cb/Y**: Component output.
5. **VIDEO /AUDIO**: Video signal output jack and Left/right audio output jack.
6. **ASI IN**: BNC connector for TS input.
7. **CVBS OUT**: Output video with BNC interface.
8. **SDI OUT**: Output the SDI Video stream.
9. **ASI OUT**: Output MPEG-2 or Mpeg-4 TS.
10. **ETHERNET**: The port is used in network remote control.
11. **TUNER OUT (LOOP OUT)**: Use it when connecting to another IRD.
12. **TUNER IN**: Connect to a RF or IF signal.
13. **POWER SUPPLY and POWER SWITCH**: 90~250V AC, 50Hz.

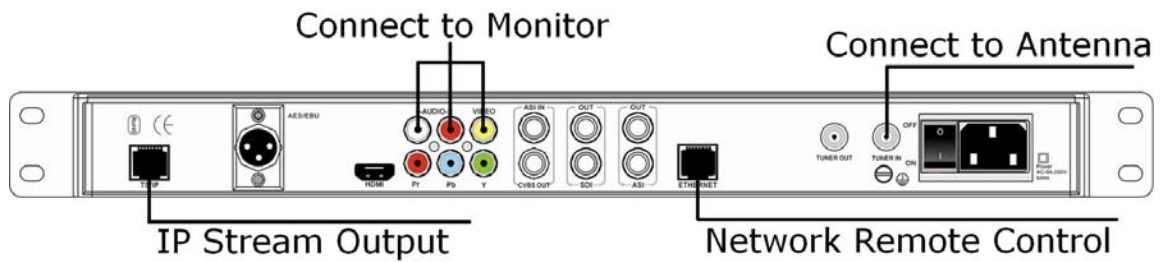
There are several ways of connecting the IRD to your existing Audio/TV system. We recommend using one of the following set-ups for best results:

**Note:** if you need connect the 'Ethernet' and 'TS/IP' ports at the same time, please set the separate network switch for the two connections.

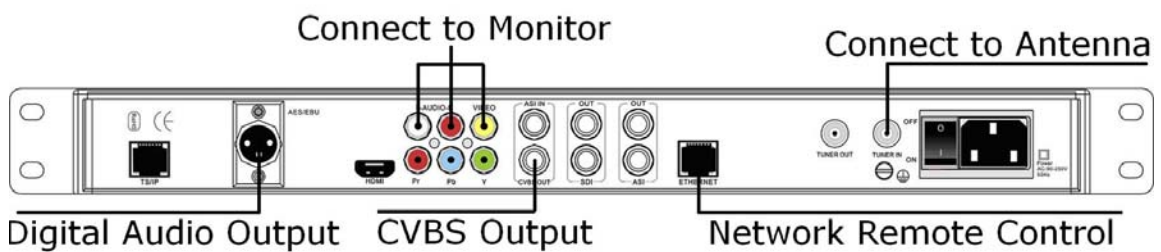
## Tuner in and ASI out



## Tuner in and IP out

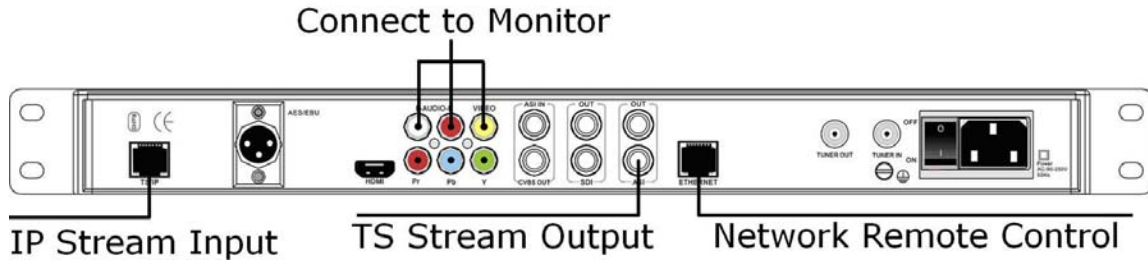


## Tuner in and CVBS out

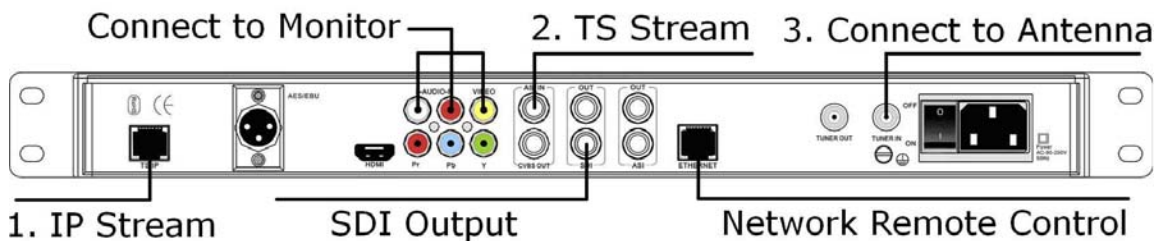




## IP in and ASI out

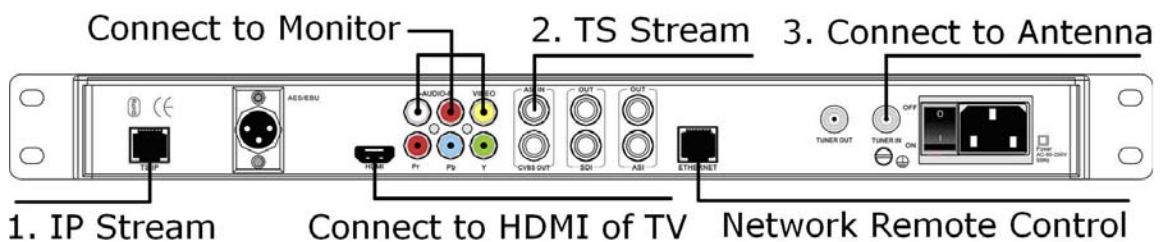


## Tuner/IP/ASI in and SDI out



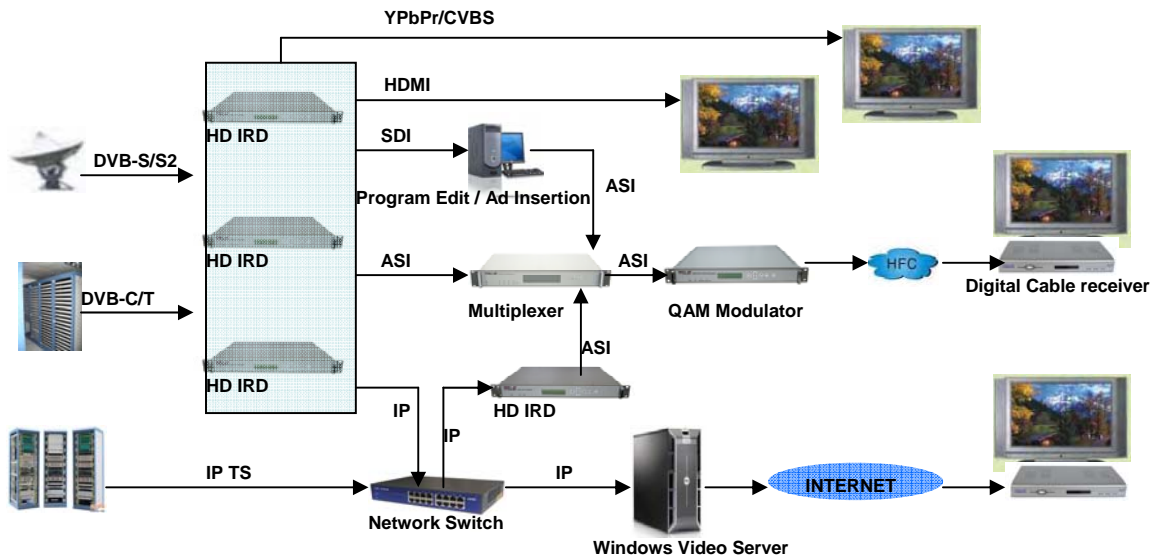
**Notice:** You should select one signal source from the 1, 2 and 3 option.

## Tuner/IP/ASI in and HDMI out

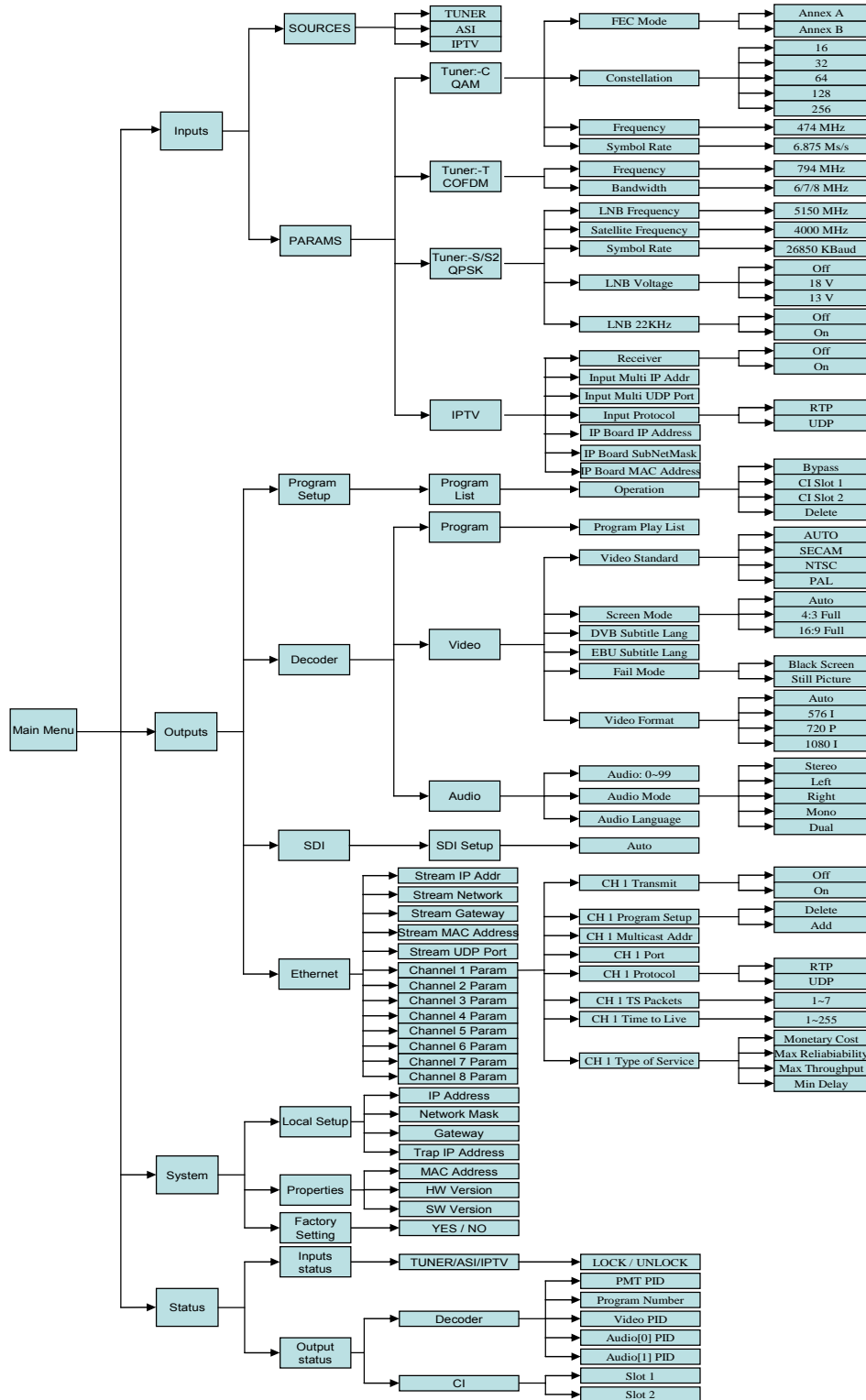


**Notice:** You should select one signal source from the 1, 2 and 3 option.

## System Connection Diagram



# Front Panel Control & Operation



**The default parameters:**

Class 1	Class 2	Class 3	Class 4	Default value
Inputs	SOURCE			Tuner
	SOURCE PARAMS Setup	Tuner: -C QAM	FEC mode	Annex A
			Constellation	64 QAM
			Frequency	474MHz
			Symbol Rate	6.875Ms/s
		Tuner: -T COFDM	Frequency	474MHz
			Bandwidth	8MHz
		Tuner: -S2 QPSK/8PSK	LNB Frequency	5150MHz
			Satellite Frequency	4000MHz
			Symbol Rate	26850KBaud
			LNB Voltage	OFF
			LNB 22KHz	OFF
		IPTV	Receiver	ON
			Input Multi IP Addr	227.10.20.30
			Input Multi UDP Port	1234
			Input Protocol	UDP
			IP Board IP Address	192.168.1.30
			IP Board SubNetMask	255.255.0.0
			IP Board MAC Address	01:02:03:04:05:06
Outputs	Program Setup	Program List	Operation	Bypass
	Decoder	Program	Program Playlist	The 1 <sup>st</sup> program
		Video	Video standard	Auto
			Screen Mode	Auto
			DVB Subtitle lang	English
			EBU Subtitle lang	English
			Fail Mode	Still picture
			Video Format	1080i
		Audio	Audio:0-99	50
			Audio Mode	Stereo
			Audio Language	English
	SDI	SDI Output Format		Auto
	Ethernet	Stream IP Addr		192.168.1.112
		Stream Network		255.255.255.0
		Stream Gateway		0.0.0.0
		Stream UDP Port		3000
		Channel 1~8 Param	CH# Transmit	Off
			CH# Program Setup	Delete
			CH# Multicast Addr	227.40.50.60
			CH# Port	1234

			CH# Protocol	UDP
			CH# TS Packets	7
			CH# Time to Live	8
			CH# Type of Service	Normal
System	Local Setup	IP Address		192.168.1.16
		Network Mask		255.255.255.0
		Gateway		192.168.1.1
		Trap IP Address		0.0.0.0
	properties	MAC Address		A0:07:ED:0F:60:1F
		HW Version		The current version
		SW Version		The current version
	Factory setting			NO
Status	Input status	Tuner		UNLOCK
	Output Status	Decoder	PMT PID	The first program's PMT PID/Program Number/Video PID/Audio PID
			Program Number	
			Video PID	
			Audio[0] PID	
			Audio[1] PID	
		CI	Slot 1	EMPTY
			Slot 2	EMPTY

### Notice:

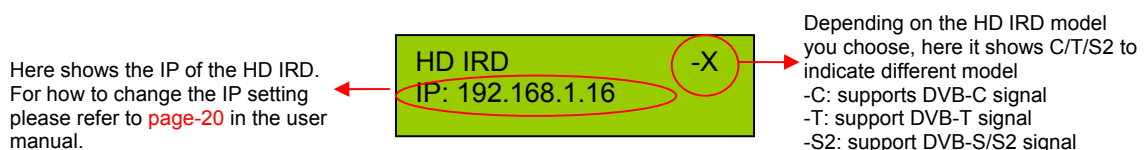
1. If the HD IRD doesn't contain the IP board, there's no 'IPTV' option in the submenu 'SOURCE';
2. There's just one kind of Tuner parameter to set in the submenu 'PARAM' according to the module you order.
3. To enter the whole menu, you should press 'MENU' button. Then you can enter each submenu or confirm the setting by pressing 'OK' button, and exit the submenu or cancel the setting which you just made by pressing 'MENU' button, and change the parameters by pressing ↑ → ↓ ← buttons.

## Input

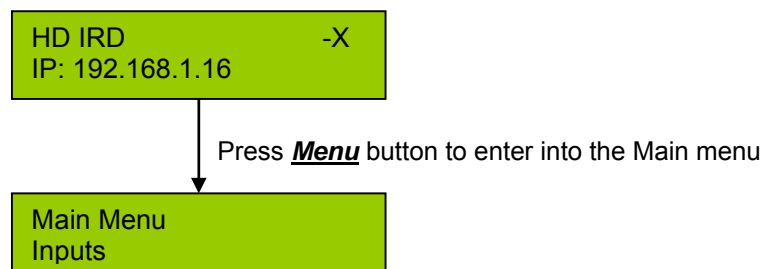
In this menu, there are two submenus used to select the input source and configure the input parameters. They are 'SOURCES' and 'PARAMS'.

How to get into the Input menu:

- Power on the HD IRD.
- After initialization, the LCD displays as:



- Press the Menu button on the front panel to enter into the main menu:



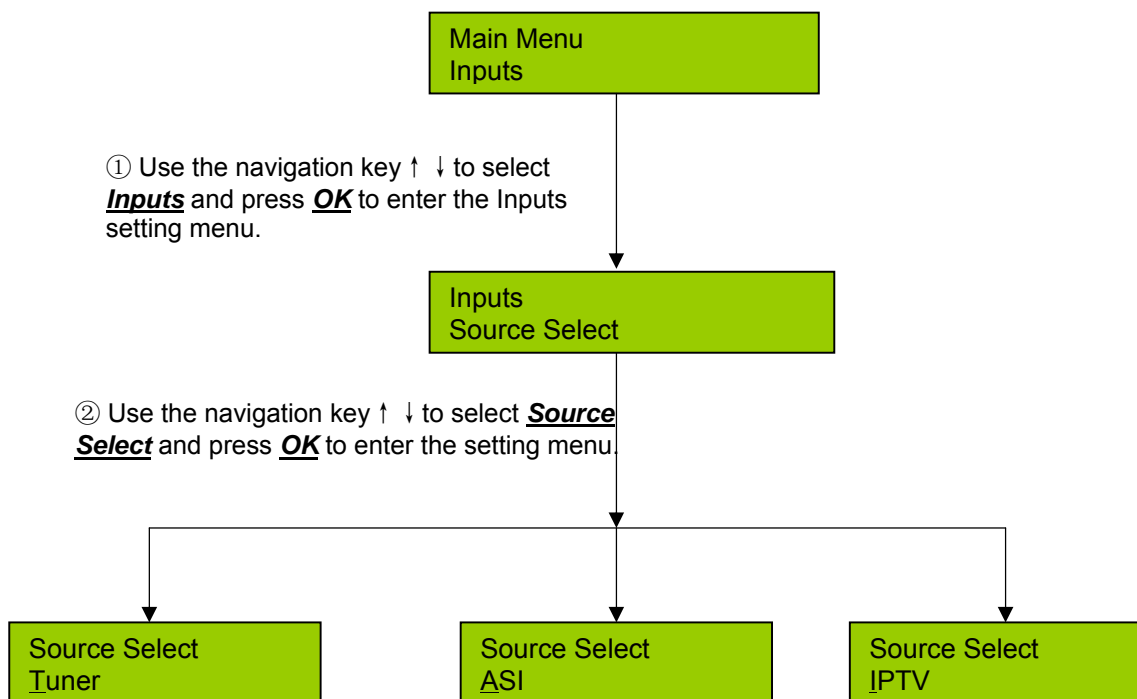
## Sources

In this submenu, there are three options: TUNER, ASI and IPTV.

**TUNER:** If you select this item, the IRD will search the signal from the tuner after configuration and exit at 'Params'.

**ASI:** If you select this item, the IRD will search the signal from the ASI input port.

**IPTV:** If your equipment has the IP function and the signal is from the IP port, you can select this item. The IRD will search channels after configuration and exit at 'Params'.



In **Source Select** setting menu, press **OK**, a cursor will display below the first letter of the input method you choose. You can use the navigation key ↑ ↓ to change, and then press **OK** to confirm the source. Press **Menu** button to exit this menu.

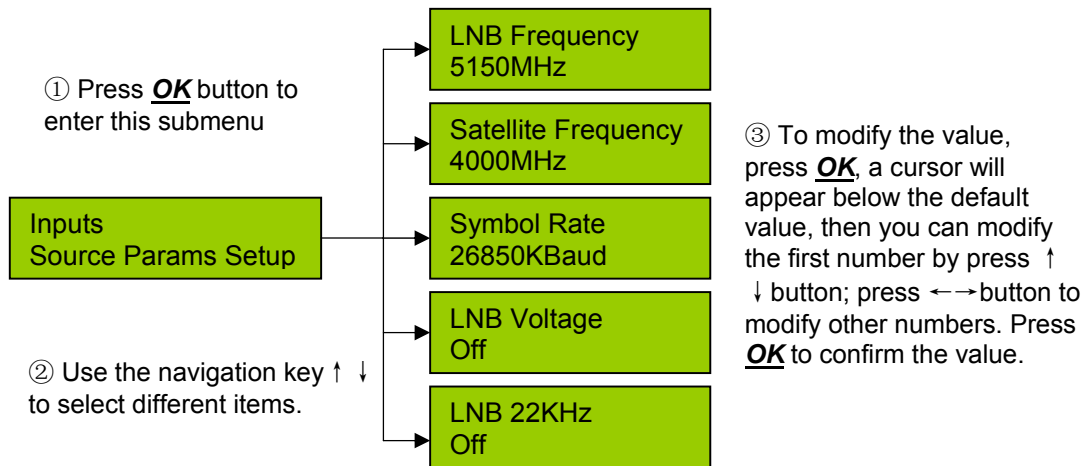
## Params

In this submenu, there are two items: TUNER and IPTV. If your IRD is for DVB-C/T/S/S2 and IPTV, please select relative reception mode such as QAM, COFDM, QPSK and IPTV. According to different type IRD, please set different parameters as below.

### TUNER

In this option, several parameters are required to setup.

1) If the unit is for DVB-S/S2 (QPSK):

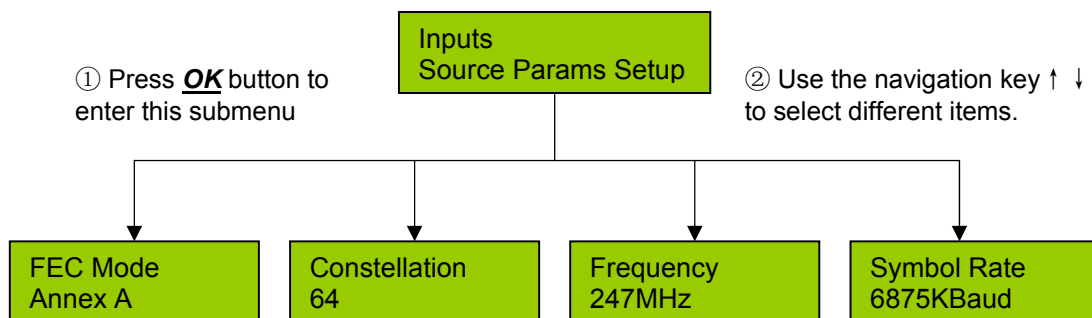


- LNB frequency: this is the LNB's local oscillation (LO) frequency, every LNB have one or two local oscillation frequencies which can be obtained from the LNB provider.
- Satellite frequency: This is the satellite down-conversion frequency, every transponder has one frequency, and you can get this parameter from the satellite programs provider.

**Note: be sure the absolute value which LNB Frequency minus Satellite Frequency equals is within the range 950MHz-2150MHz.**

- Symbol rate: Every transponder have one symbol rate, you can get this parameter from the satellite programs provider.
- LNB Voltage: LNB voltage is the power that supply to the LNB in order to receive satellite signal with different polarization. Generally 18V is for horizontal while 13V is for vertical.
- LNB 22KHz: Generally this is used to control 22KHz Switch, typically used for LNB with double L.O in Ku band. 'On' is for the high L.O and 'Off' is for the low L.O

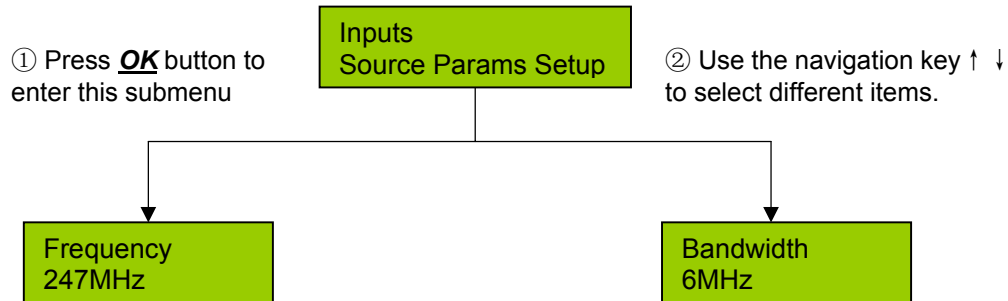
2) If the unit is for DVB-C (QAM):



- FEC Mode: select the adaptable FEC mode (Annex A/B) according to the fact.
- Constellation: set this value according to the setting of QAM modulator in the head-end system.
- Frequency: set the frequency for receiving the cable signal.
- Symbol rate: set the symbol rate for receiving the cable signal.



3) If the unit is for DVB-T (COFDM):

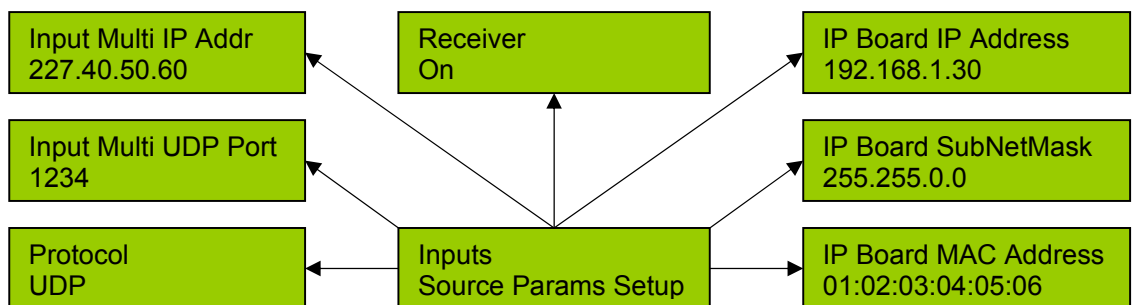


- Frequency: set the frequency for receiving the terrestrial signal.
- Bandwidth: select the transmitting bandwidth (6/7/8 MHz).

**Notice: you can get these parameters from the program provider.**

#### IPTV:

When the receiver wants to receive the signal from the internet, you need to configure these parameters. For DVB-S/S2/C/T, this part is the same.



Press **OK** and ↑ ↓ to input the three parameters according to the IP source.

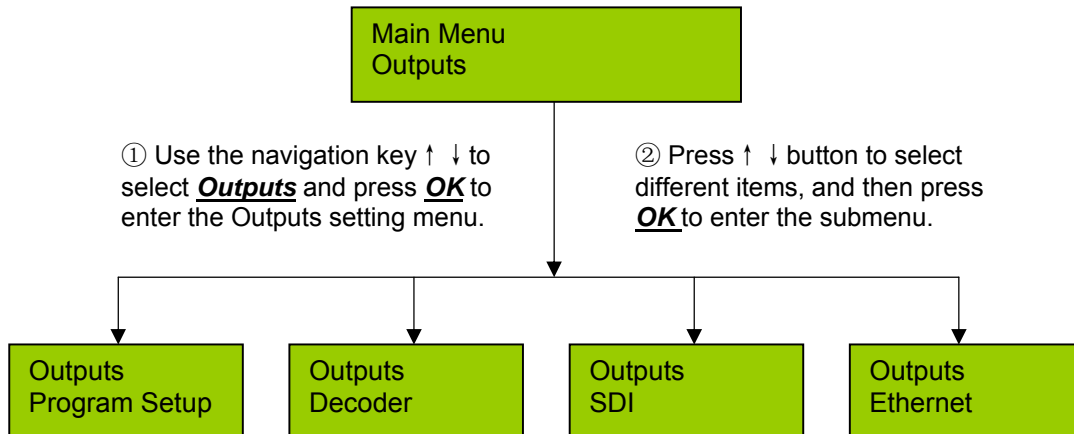
If you know little about the three parameters, just keep them in default value.

- Receiver: Select On or Off to open or close the IPTV function.
- Input Multi IP Addr: Set up the multicast IP address for receiving the IP signal.
- Input Multi UDP port: Set up the UDP port for receiving the IP signal.
- Input Protocol: select UDP or RTP protocol according to the fact.
- IP Board IP Address: Default setting.
- IP Board SubNetMask: Default setting.
- IP Board MAC Address: Default setting.

**Notice: When two or above pieces of HD IRD are working in IPTV at the same time, you'd better set different 'IP Board IP Address' and 'IP Board SubNetMask' for each equipment.**

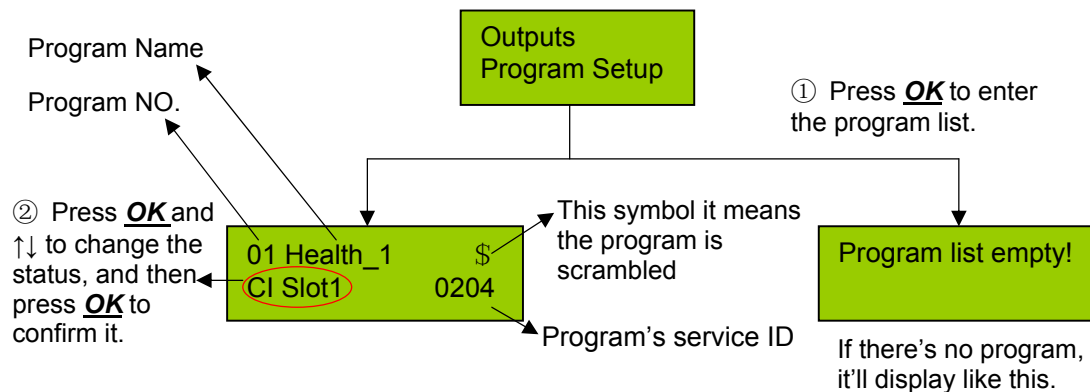
## Output

In this menu, there are four submenus including: Program Setup, Decoder, SDI and Ethernet.



## Program Setup

In this option, all the programs received will be list. By changing the program's status, you can determine whether to transmit the program or appoint a CI Slot to descramble the scrambled program.



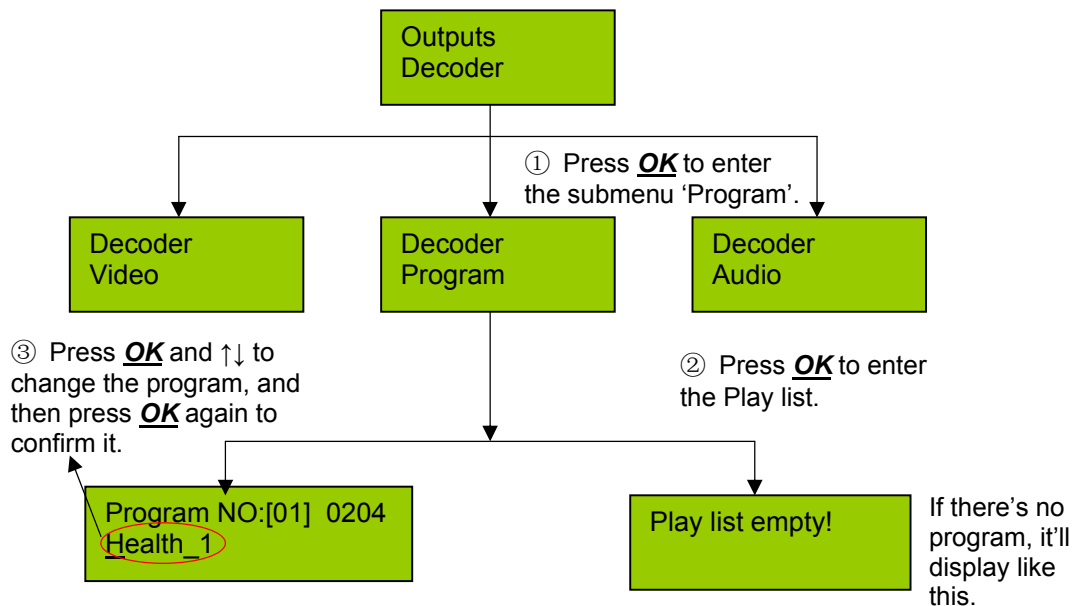
- Bypass: Transmit the program without any disposal.
- CI slot1: If the program is scrambled, you can appoint the CAM card inserted in Slot 1 to descramble it. Under this condition, the program is transmitted in default.
- CI slot2: If the program is scrambled, you can appoint the CAM card inserted in Slot 2 to descramble it. Under this condition, the program is transmitted in default.
- Delete: Any program you don't want to transmit can be forbidden by selecting this status.

## Decoder

In this menu, there are three items: Program List, Video and Audio.

### Program List:

All the programs received by the receiver will be list here, and you can select the program played via AV interface.



### Video:

Configure the video parameter

- **Video standard:** in this item, you can select video standard including Auto, SECAM, NTSC and PAL.
- **Screen Mode:** set the screen aspect ratio, it includes Auto, 4:3Full, 16:9Full.
- **DVB subtitle Lang:** English only
- **EBU subtitle Lang:** English only
- **Fail Mode:** include Black Screen and Still Screen. Black screen: when the receiver lost the signal, keep the screen black. Still screen: when the receiver lost the signal, keep the last picture on the screen.
- **Video Format:** set the video format in this item, it includes: Auto, 480 I, 480 P, 576 I, 720 P and 1080 I.

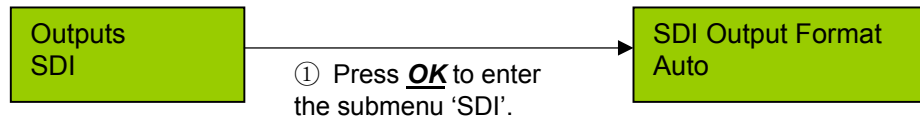
### Audio:

Configure the audio parameter

- **Audio:**0-99
- **Audio mode:** include Stereo, Left, Right, Mono, Dual
- **Audio Language:** Select different audio language.

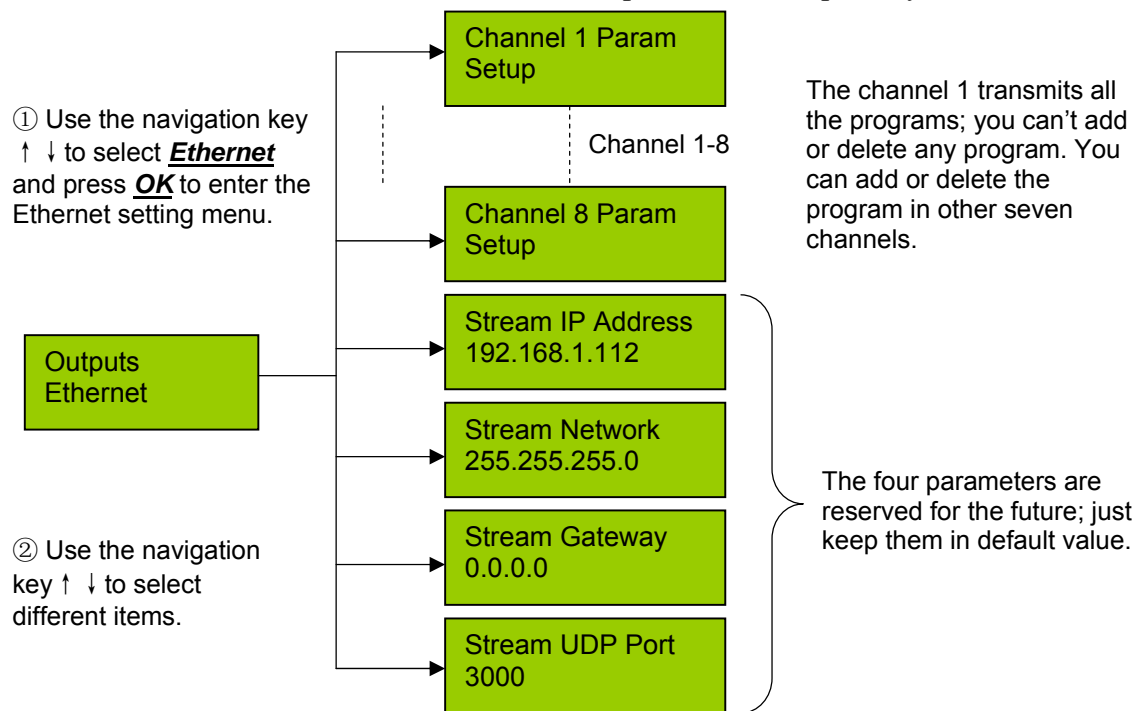
## SDI

The SDI output format is 'Auto' which means one audio channel is embedded in the SDI video output stream and you can't change it here.

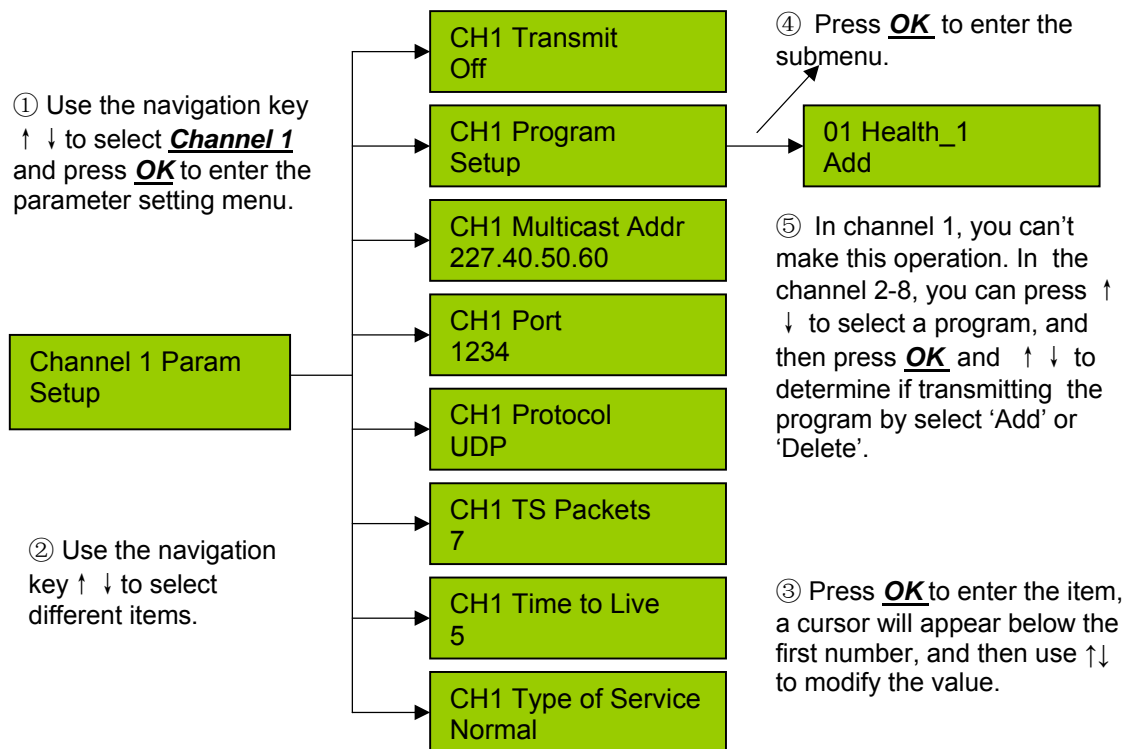


## Ethernet

When select the IP port as the output, you need to setup some parameters in this submenu. There are 8 channels, and each can be used to output IP stream separately.



- Stream IP Addr: Default setting ( Reserve for the future)
- Stream Network: Default setting ( Reserve for the future)
- Stream Gateway: Default setting (Reserve for the future)
- Stream Mac Address: Default setting (Reserve for the future)
- Stream UDP port: Default setting (Reserve for the future)
- Channel 1 Param Setup:



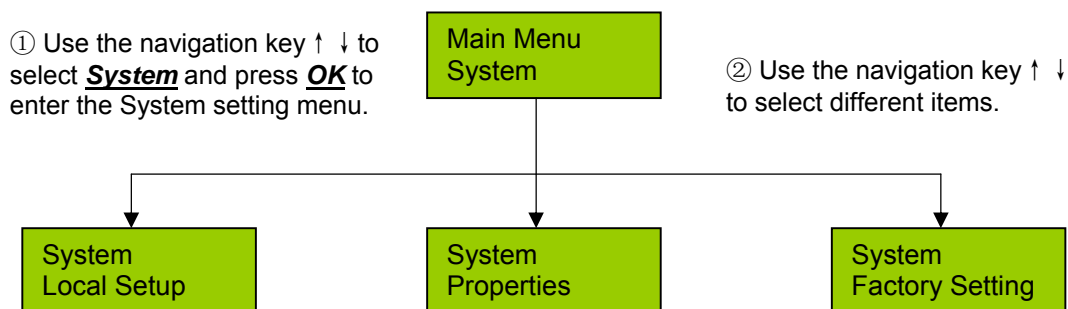
Other channel's menu structure is just like the channel 1.

- CH 1 Transmit: Select Off or On to close or open the IP channel.
  - CH 1 Program Setup: For your operation convenience, all the input programs will be outputted via this IP channel and you can't add or delete programs here.
  - CH 1 Multicast Addr: Set up the multicast IP for broadcasting the IP signal
  - CH 1 Port: Set up the UDP or RTP port for broadcasting the IP signal
  - CH 1 Protocol: UDP/RTP
  - CH 1 TS Packets: Configuration range is 1—7 (7 is recommended)
  - CH 1 Time to Live: Configuration range is 1-255 (8 is recommended)
  - Ch 1 Type of Service: It includes Normal, Min delay, Monetary Cost, Max reliability, Max Throughput
- Channel 2 Param Setup:
    - CH 2 Transmit: Select Off or On to close or open the IP channel.
    - CH 2 Program Setup: Select Add to add the program to the IP channel, and select Delete to delete the program in the IP channel.
    - CH 2 Multicast Addr: Set up the multicast IP for broadcasting the IP signal
    - CH 2 Port: Set up the UDP or RTP port for broadcasting the IP signal
    - CH 2 Protocol: UDP/RTP
    - CH 2 TS Packets: Configuration range is 1—7 (7 is recommended)
    - CH 2 Time to Live: Configuration range is 1-5 (5 is recommended)
    - Ch 2 Type of Service: It includes Normal, Min delay, Monetary Cost, Max

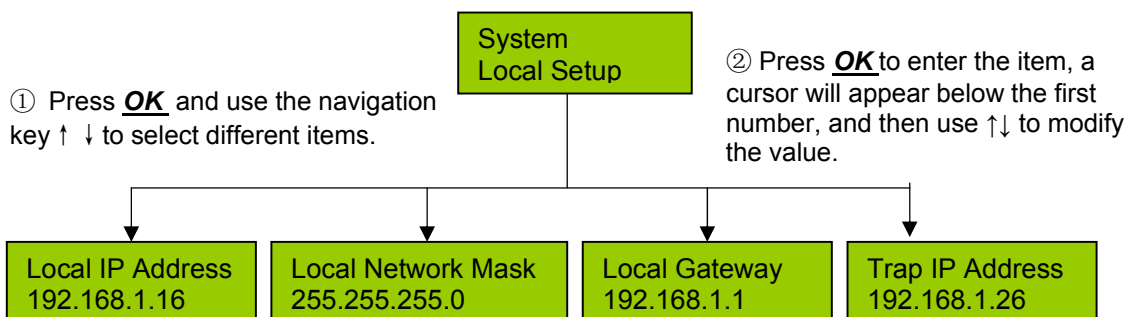
- reliability, Max Throughput,
- Channel 3/ 4/ 5/ 6/ 7/ 8 Param Setup: The same as Channel 2

## System

Under this menu, there are three submenus including Local Setup, Properties and Factory Setting.



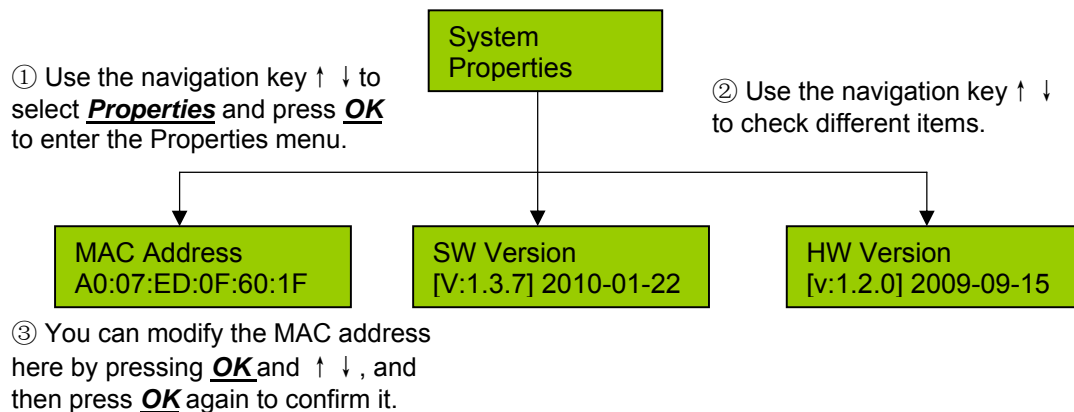
## Local Setup



- IP address: Local IP setting for connecting to the server. This IP and the server's IP should be in the same section.
- Network Mask: Network Mask setting for connecting to the server.
- Gateway: Gateway setting for connecting to the server, it's the same to the server.
- Trap IP address: This IP should be the same as the server's IP, before connection, it will verify the server's IP, if they are the same, the connection will be allowed.

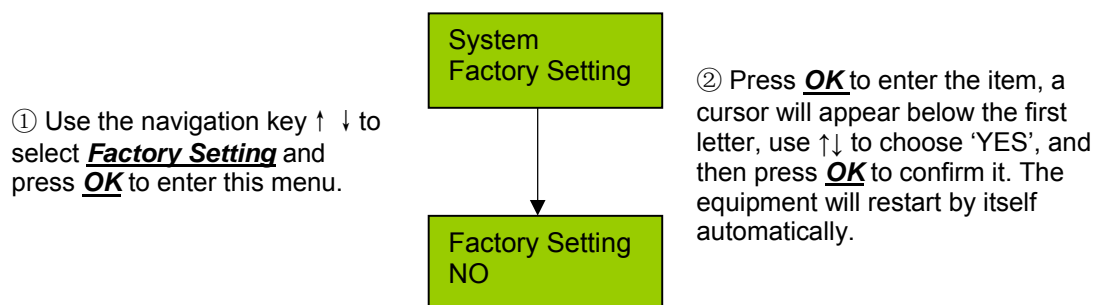
## Properties

- Mac Address: Query the receiver's Mac Address.
- HW Version: Query the receiver's hardware version.
- SW Version: Query the receiver's software version.



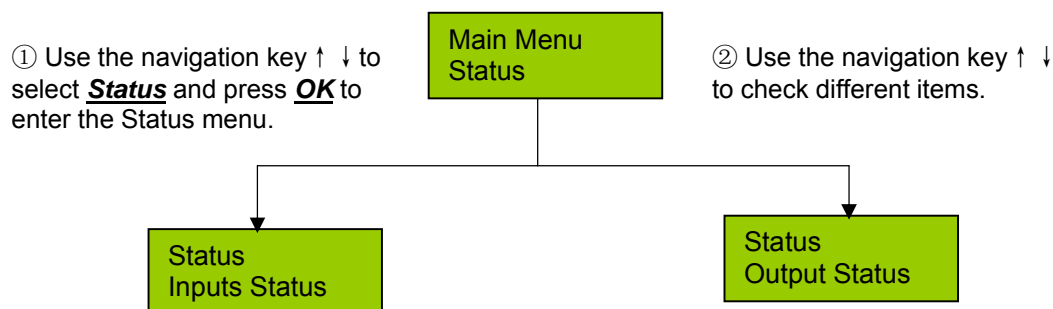
## Factory Setting

Take all the parameters of the receiver back to factory setting.



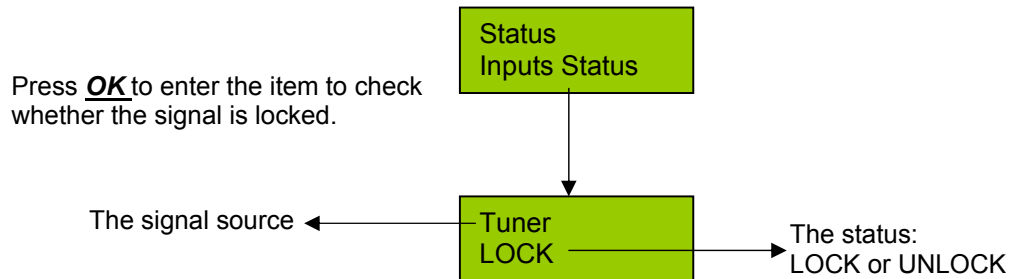
## Status

There are two submenus under this menu: Input status and output status.



## Input status

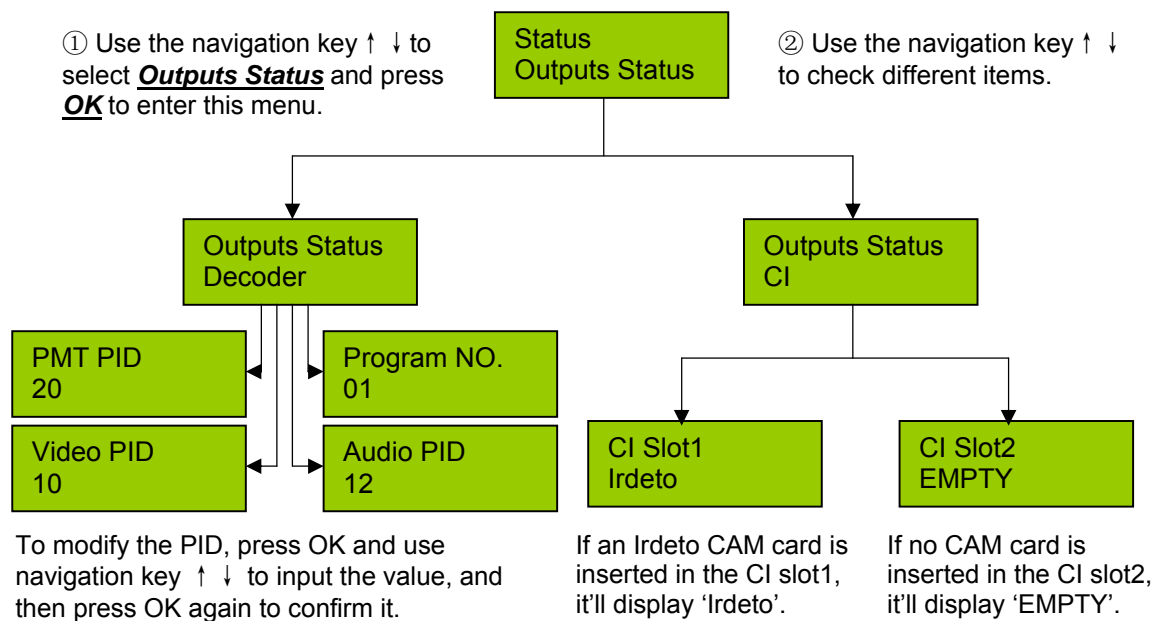
Query the input status, you can check whether the equipment locks the signal or not.



## Outputs status

**Decoder:** In this item you can check the programs' PMT PID, Program Number, Video PID and Audio PID.

**CI:** Check the status of the two CI slots. If a CAM card is inserted in the CI slot, it'll display the name of this CAM card, otherwise it'll display 'EMPTY'.





## NMS Control & Operation

Except using the front panel to configure and operate the equipment, this HD IRD also supplies the network management function. When you get the equipment, there should be a CD containing the network management software. If you want to control and operate the equipment via the network management software, please copy the software from the CD to your server (Computer).

### LAN parameters setting & connection establishment

Before logging on the equipment, you should use the front panel to configure the local network setting.

#### Local network setting

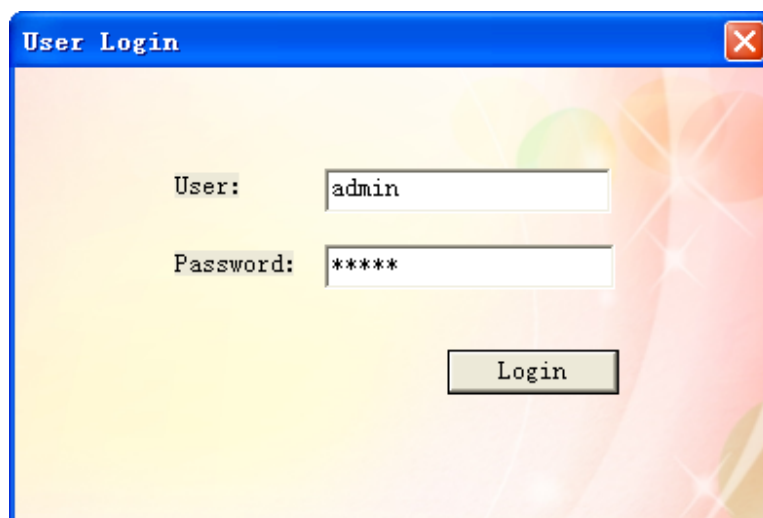
Let's take an example to explain how to configure the local network for connection. We assume the server's IP is 192.168.1.2, network mask is 255.255.255.0 and gateway is 198.168.1.1. All these parameters in the equipment should be:

- IP address: Local IP setting for connecting to the server. This IP and the server's IP should be in the same section. For example it can be 192.168.1.x, x can be 3 to 254.
- Network Mask: Network Mask setting for connecting to the server. It should be the same as server's. 255.255.255.0.
- Gateway: Gateway setting for connecting to the server. It should be the same as server: 198.168.1.1
- Trap IP address: This IP should be the same as the server's IP. Before connection, it will verify the server's IP, if they are the same, the connection will be allowed. It should be 192.168.1.2.

#### Connection

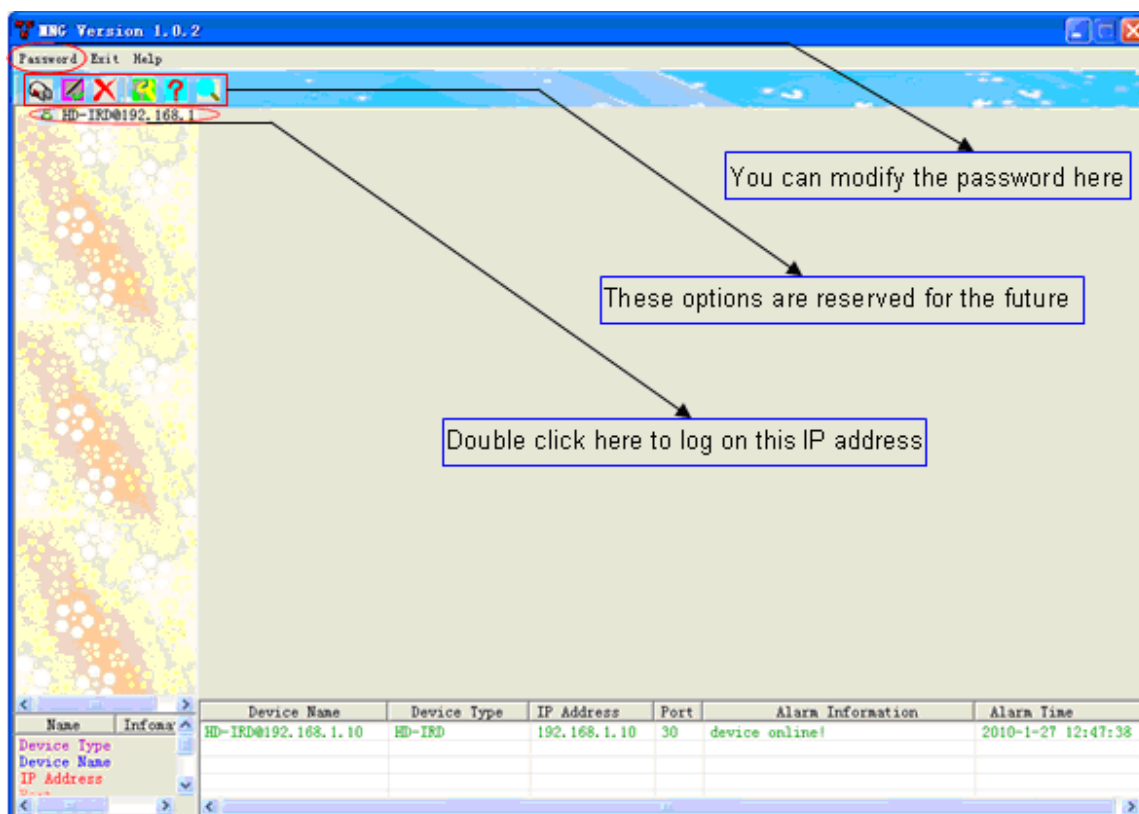
Connect the server and equipment via Ethernet port with an Ethernet cable before running the network management software on the server. Then log on the NMS and enter the user name and password, the default user name and password both are "**admin**", just as the following picture.

**Notice:** this NMS can manage several pieces of HD IRD at the same time, as long as these equipments are connected to the server via the Network Switch. Now we take one piece of HD IRD for example to illustrate the operation.



## NMS Main Interface Configuration

After logging in successfully, it'll search the HD IRD which is connected to the server and display it in the left side as below automatically.



After logging on the HD IRD, you can see seven pages within every IRD, they are: Main Board, Audio/Video, Status, IP Board, Upgrade, System and Advance. Except that, there're two parts used to display some correlative information, just as the following picture.



List'. For example, you can make the equipment operate any program at some time automatically.

- ◆ Timer: select 'Disable' or 'Enable' to close or open the timer function.
- ◆ Time Reference: you can select the time embedded in the TS stream or the time in the server as the time reference.
- ◆ IRD Current Time: the time in this HD IRD equipment.
- ◆ Time and Operation: set the operation you want the equipment to do and the time you want the operation is carried out at.

After setting all the parameters in 'Timer', press 'OK' button to save it and press 'SendData' to apply it. Then you can see the settings in the 'Program List'.

#### ● Program List

- ◆ Refresh: update the programs from the input signal.
- ◆ Default: get all the programs' Operation back to 'Bypass'.

In the programs list box, all the received programs will be list. There are seven items providing the programs information: Number, Name, Current Operation, Timer Operation, Timer Start time and Timer Stop time. Let's take CCVT 4 (NO.1) for example to explain how to edit the programs.

Click the program which you want to edit (in the picture, it is CCTV 4, NO.1), and then this program will be highlighted in blue, program number will show in "Program Number" item. Then click the down list menu in the "program operation" item to select the status you need.

#### Explanation of the 'Operation' option:

- ✓ Bypass: Transmit the program without any disposal.
- ✓ CI slot1: If the program is scrambled, you can appoint the CAM card inserted in Slot 1 to descramble it. Under this condition, the program is transmitted in default.
- ✓ CI slot2: If the program is scrambled, you can appoint the CAM card inserted in Slot 2 to descramble it. Under this condition, the program is transmitted in default.
- ✓ Delete: Any program you don't want to transmit can be forbidden by selecting this status.

#### ● Play List

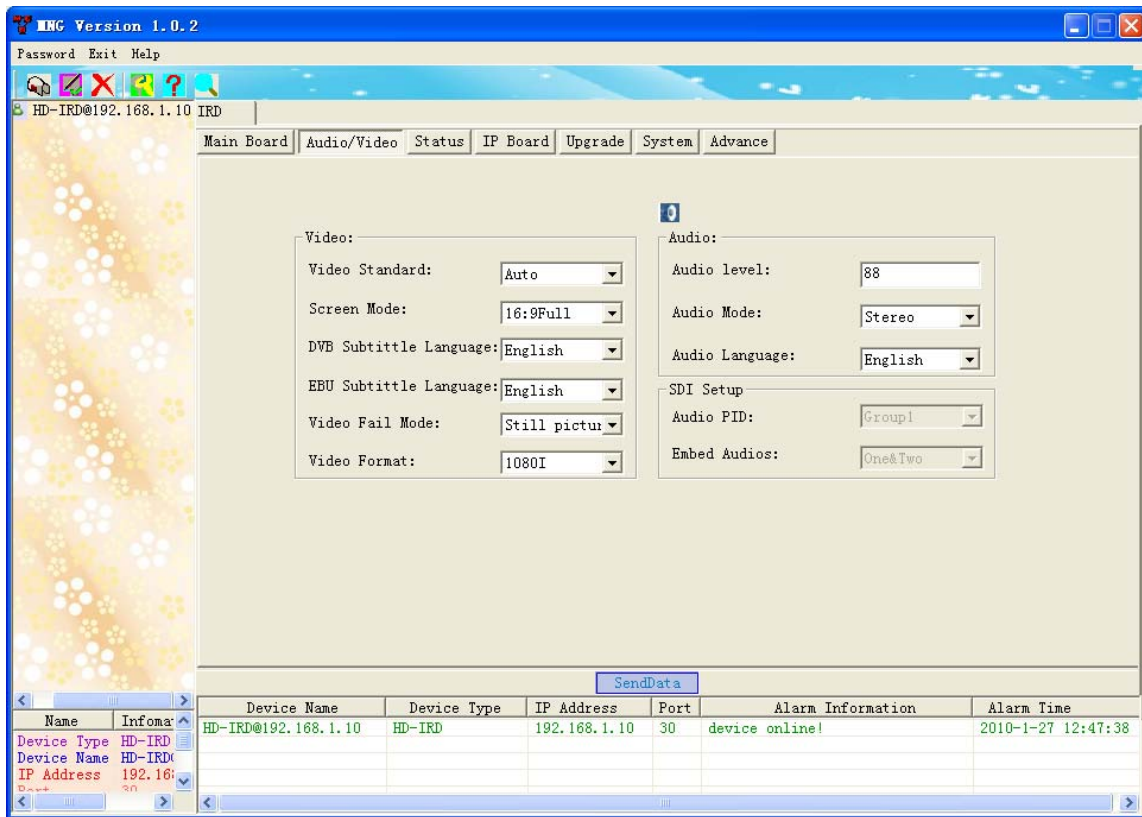
In this box, select the programs you want to play via AV interface, and then click "SendData" button to save the parameters, the programs you select will be played.

#### ● Playing program

The information of the program played currently will appear here, such as PMT PID, Video PID, Audio PID and so on.

**Notice: After setting all the parameters for each page (including the following 6 pages), you should press 'SendData' to enable the new parameters.**

## ➤ Audio/Video



### ● Video

- ◆ Video standard: in this item, you can select video standard including Auto, SECAM, NTSC and PAL.
- ◆ Screen Mode: set the screen aspect ratio in this item, it includes Auto, 4:3 Full, 16:9 Full.
- ◆ DVB subtitle Language: English only
- ◆ EBU subtitle Language: English only
- ◆ Video Fail Mode: include Black Screen and Still Screen. Black screen: when the receiver lost the signal, keep the screen black. Still screen: when the receiver lost the signal, keep the last picture on the screen.
- ◆ Video Format: includes Auto, 576 I, 720 P and 1080 I.

### ● Audio

- ◆ Audio Level:0-99
- ◆ Audio mode: include Stereo, Left, Right, Mono, Dual
- ◆ Audio Language: Select different audio language.

### ● SDI Setup

They are not available temporarily, and one audio channel is embedded in the SDI video output stream automatically.

### ➤ Status

This page is used to display the status of CI Slot, total input rate, valid input rate, BER (it'll won't affect the normal function in fact now) and tell you whether the input signal is locked or not.

MNC Version 1.0.2  
 Password Exit Help

HD-IRD@192.168.1.10 IRD

Main Board Audio/Video Status IP Board Upgrade System Advance

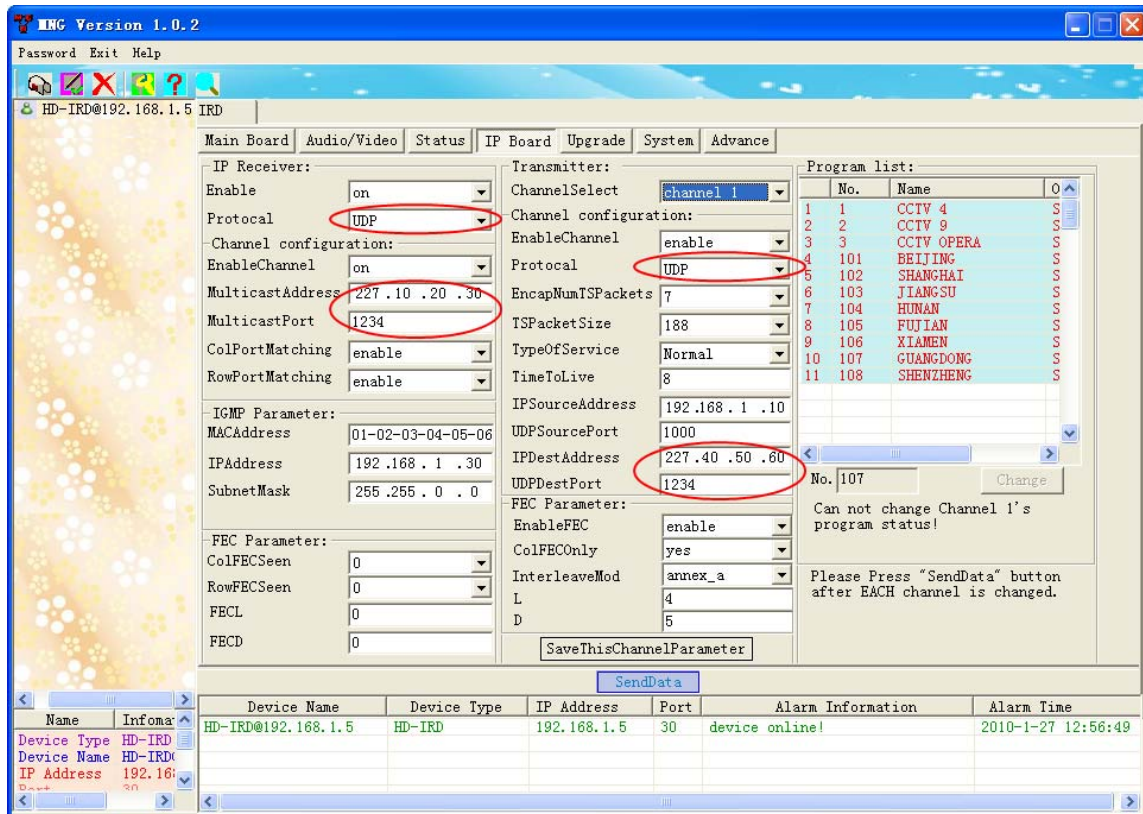
CI Slot1: EMPTY  
 CI Slot2: EMPTY  
 Total TS rate: 38.015 Mbit  
 Valid TS rate: 33.793 Mbit  
 BER: 0  $10^{-6}$   
 TUNER LOCK

SendData

Name	Infoma	Device Name	Device Type	IP Address	Port	Alarm Information	Alarm Time
Device Type	HD-IRD	HD-IRD@192.168.1.10	HD-IRD	192.168.1.10	30	device online!	2010-1-27 12:47:38
Device Name	HD-IRD						
IP Address	192.168.1.10						
Port	30						

### ➤ IP Board

This page is used to configure the parameters for the IP function including 'IP Receiver', 'Transmitter' and 'Program List'.



**Notice: when you enable the 'IP Receiver', you must set the right 'MultiCastAddress' and 'MultiCastPort'. For example**

	HD IRD_A	HD IRD_B
Role	IP Transmitter	IP Receiver
Address	IPDestAddress:227.40.50.60	MultiCastAddress :227.40.50.60
Port	UDPDestPort: 1234	MultiCastPort : 1234
Protocol	UDP	UDP

#### ● IP Receiver

- ◆ Enable: When the programs are from IP source, select on.
- ◆ Protocol: Optional UDP and RTP according to your IP source.
- ◆ Enablechannel: When the programs are from IP source, select on.
- ◆ MulticastAddress: Set up the multicast IP address for receiving the IP signal.
- ◆ MulticastPort: Set up the UDP port for receiving the IP signal.
- ◆ ColPortMathing/RowPortMatching: If the quality of the IP output stream isn't high, you can select 'Enable' in both the two options, and then set the following 'FEC Parameters'.
- ◆ IGMP Parameters: these parameters are used to communicate within the equipment, it's better to keep them in default.
- ◆ FEC Parameters: the larger these values are, the stronger it corrects the mistakes. But notice please: FECL multiplied FECD should less than 100.



## ● Transmitter

- ◆ ChannelSelect: Set up the IP channel number where you want to transmit programs.
- ◆ EnableChannel: Enable or disable the IP channel.
- ◆ Protocol: Optional UDP or RTP according your requirement.
- ◆ EncapNum TSPackts: Configuration range is 1—7. (Number 7 is recommended).
- ◆ TypeOfService: It includes Normal, Min delay, Monetary cost, Max reliability, Max Throughput,.
- ◆ TimeToLive: Configuration range is 1-255. (Number 8 is recommended).
- ◆ IPDestAddress: Set up the IP channel's multicast IP address for broadcasting the IP signal.
- ◆ UDPDestPort: Set up the UDP port for the IP signal.
- ◆ FEC Parameters: to enhance the capability of correcting errors, you can 'Enable' this option, select 'InterleaveMod' according to your request. If you know little about it; just keep these parameters default values.

Other parameters: Default setting.

### Note:

**1. IP Channel 1 transmits all the input programs, which means you can't add or delete programs on IP channel 1. For other IP channels, you can edit the output program as you wish by selecting it and pressing 'Change' button.**

**2. after setting all the parameters for one IP channel, you should press 'SaveThisChannelParameter' to save the setting of this channel.**

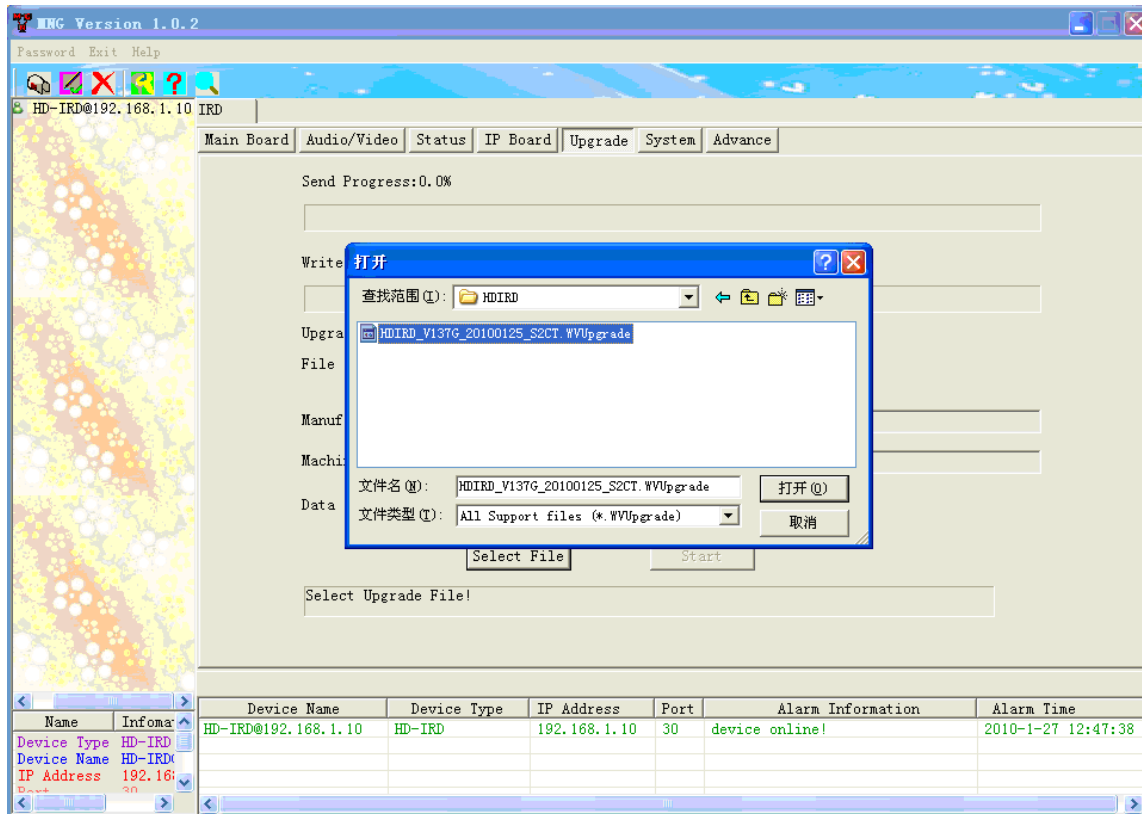
## ● Program list

In this part, you can see the information of the programs which is in the selected channel. You can determine which program will be transmitted by changing the status of 'Operation' in the list.

### ➤ Upgrade:

It's convenient to upgrade the latest software via this NMS. Click 'Select File' button, select a desired document and click 'Start' the NMS will upgrade for HD IRD automatically. You should restart the NMS after the upgrade.





If the upgrade is successful, a message 'Upgrade succeeds! Please restart the software!' will pop up, and then the HD IRD will restart automatically.

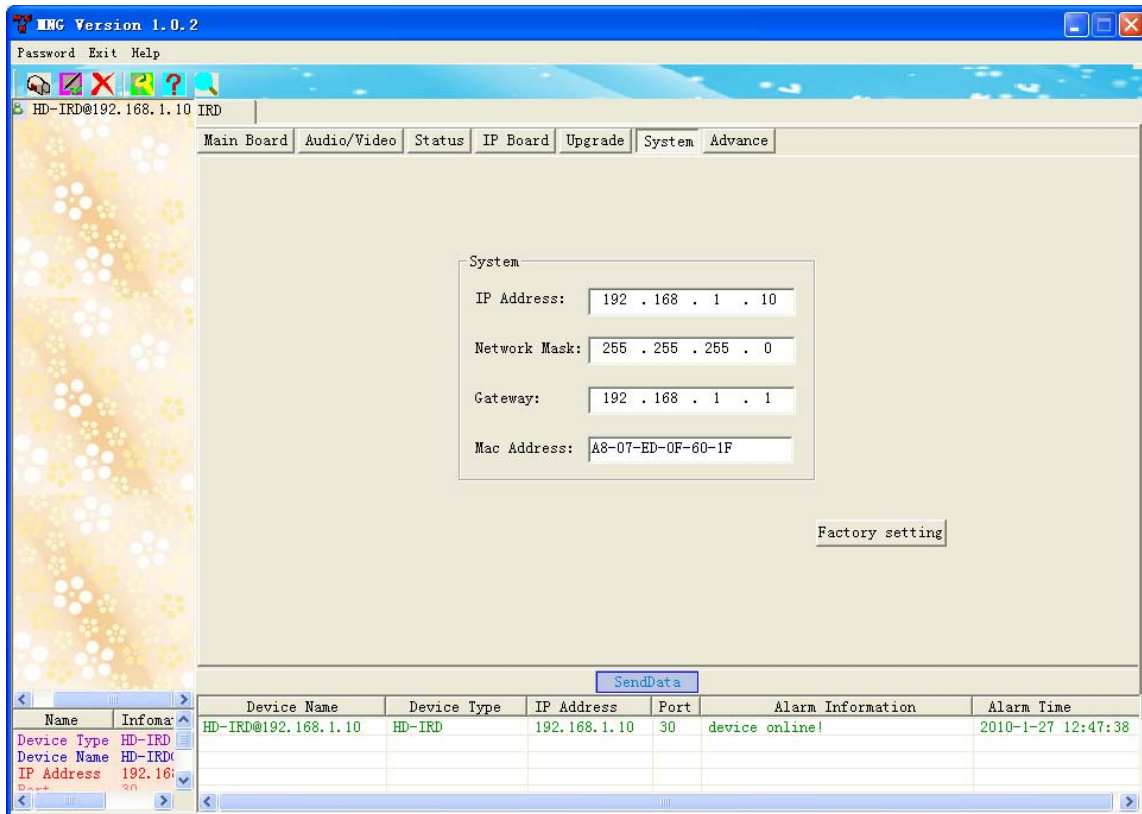
## ➤ System

### ● System

- ◆ IP address: Local IP setting for connecting to the server. This IP and the server's IP should be in the same section.
- ◆ Network Mask: Network Mask setting for connecting to the server.
- ◆ Gateway: Gateway setting for connecting to the server.
- ◆ Mac Address: Query the receiver's Mac Address.

### ● Factory setting

Get all the parameters in the equipment back to the default parameters.



### ➤ Advance

This option is designed for recording the information about the equipment, however, the option is not available temporarily and reserved for the future.

## Troubleshooting

Problem	Possible causes	What to do
The LCD display on the front panel does not light up.	No power.	Check that the main cable is plugged into the power socket.
The front panel red light is on. AV has no output.	No output connection.	Check the output connection
	TV is not in AV mode.	Set TV in AV mode.
No or bad signal.	No cable connection or the program does not exist in the current satellite.	Check the cable connections, LNB and other equipment connected between the LNB and the STB, and /or adjust the dish.
	The satellite dish is not facing the satellite.	Adjust the dish. Check the signal level in the antenna setup menu.
Bad picture / Blocking error.	The satellite dish is not facing the satellite.	Adjust the dish.
	Signal is too strong.	Connect a signal attenuator to the LNB input.
	Signal is too weak.	Change to a larger dish.
	LNB noise figure is too high.	Change to a LNB with a lower noise figure.
	The LNB is defect.	Change the LNB.

Problem	Possible causes	What to do
Signal is good. But No picture and no audio on AV output	The picture and audio are scrambled.	Change to a FTA channel.
	The first program is without audio and video in source signal.	Change to other programs.
There is interference on your digital satellite channel.	The system is connected with RF leads and the output channel of the receiver interferes with an existing terrestrial channel or video signal.	Change the receiver output channel to a more suitable channel.
Network remote can not connect	IP setting	Check the PC IP and equipment IP. They should be in the same segment.
	Cable is not good	Make sure the cable is good one and connect well.
No output on ASI or output unstable.	BNC Connection losing.	Make sure that ASI output cable connect with the output port tightly.
Cannot Decrypt Programs.	Don't select decrypted programs or select incorrectly.	Select decrypted programs to be correctly.
	CAM Modular Error.	Change for another CAM.
	Smart Card no right.	Contact the content provider.
	Incorrect insertion of CAM or Smart card.	Correctly insert CAM and Smart card.
	The network cable is broken.	Change it to a good one.
Can't receive IP stream	The multicast address, port or protocol is wrong.	Check the address, port and protocol of the source. Be sure the three parameters are set the same value in both source and this equipment.
Can't output IP stream	The network cable is broken.	Change it to a good one.

	The multicast address, port or protocol is wrong.	Check the address, port and protocol of the equipment. Be sure the three parameters are set the same value in both this equipment and IP stream receiver.
	The total IP output bitrates overflow	Check whether your network switch supports 100Mbps or 1000Mbps bitrates. If the total IP output bitrates more than 80Mbps, please use the 1000Mbps network switch.

## Specifications

<b>Tuner</b>	QPSK(8PSK)	Frequency Range	950~2150MHz
		Symbol Rate	1~45Ms/s (1~37Ms/s for 8PSK)
		Signal Strength	-65~-25dBm
		FEC Mode Rate Demodulation	1/2,2/3,3/4,5/6,7/8, QPSK, 8PSK
	QAM	Frequency Range	50~862MHz
		Symbol Rate	3~7Ms/s
		Signal Strength	32~-105dBuV
		QAM model	16/32/64/128/256
	COFDM	Frequency Range	45~858MHz
		Symbol Rate	0.45~7Ms/s
		Signal Strength	-90~-20dBuV
		Bandwidth	6/7/8M
<b>Audio</b>		Audio Decoding	MPEG-1/MPEG-2 layer I & II
		Audio Mode	Mono/Dual Channel/Stereo
		Connectors	RCA (L , R),AES/EBU
<b>Video</b>		Video Decode	MPEG-II ISO/IEC 13818-2, Mpeg-4 AVC/H.264
		Input Bit Rate	<=15Mbps
		Output System	PAL/NTSC/SECAM
		Video format	480i, 480p, 576i, 720p, 1080i
		Connectors	RCA (CVBS, YPbPr), HDMI, HD-SDI
<b>IP/TS output</b>		Connectors	100/1000Base-T, RJ45
		Error Correction	Pro-MPEG FEC
		# of channels	8
		Broadcasting type	Unicast or Multicast
		Supporting Protocol	DHCP, TCP/IP, IGMP, ARP
<b>IP/TS input</b>		Connector	100/1000Base-T, RJ45
		Error Correction	Pro-MPEG FEC
		Encapsulation type	MPEG2/MPEG4 TS over UDP or RTP
		Broadcasting type	Unicast or Multicast
<b>ASI input/output</b>		Connector	BNC, 75ohm
		Packet Length	188/204 byte/packet for input 188 byte/packet for output

		TS Max Bitrates	72Mbps
<b>Condition Access</b>		Interface	2 identical CI slots
		CA Methods	Multicrypt, Simulcrypt
		CAS	Conax/Irdeto/Viacess/ Nagravision/CTI/DV-Crypt, etc.
<b>Working condition&amp; Physical Specification</b>		Power supply voltage	AC: 90~250V, 50Hz/60Hz
		Power consumption	30W(Max)
		Temperature	0°C~40°C
		Humidity	10%~90%
		Size (W×D×H)	44mmH×484mmW×274mmD
		Net Weight	3.7 Kg